

Panther Creek and Bear Gulch Regeneration Harvest

Umpqua Resource Area
Coos Bay District

Environmental Assessment
EA OR125-98-20

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Chapter 1 - Purpose and Need for Action

The Umpqua Resource Area, Coos Bay District of the Bureau of Land Management (BLM), proposes two Regeneration Harvest sales totaling approximately 102 acres.

Table One: Project Areas and Watershed Analysis Documents

Regeneration Harvest	Unit #	Acres	Legal Description	Subwatershed	Watershed Analysis Document
Panther Creek	1	14	T. 27S., R.8W., Sec. 2	Panther Creek	South Fork Coos Watershed Analysis (USDI BLM 1999b)
	4	28	T. 27S., R.8W., Sec. 2	Panther Creek	
Bear Gulch	1	3	T. 27S., R.9W., Sec. 24	Panther Creek	
	2	7	T. 27S., R.9W., Sec. 24	Panther Creek	
	4	50	T. 27S., R.9W., Sec. 24 & 25	Panther Creek & Upper East Fork Coquille	Draft South Fork Coos Watershed Analysis (USDI BLM 1999b) & Draft East Fork Coquille Watershed Analysis (USDI BLM 1999a)
Total		102			

The Watershed Analysis documents listed above are hereby incorporated by reference. The proposed project areas are within the General Forest Management Area (GFMA) and Riparian Reserve Land Use Allocations as designated by the *Coos Bay District Resource Management Plan (RMP) and Environmental Impact Statement* (USDI BLM 1995). This Environmental Assessment (EA) OR125-98-20 addresses site specific, direct, indirect, and cumulative effects of this proposal.

This EA is tiered to the *Coos Bay District Resource Management Plan* and its Record of Decision (USDI BLM 1995); which is in conformance with the *Final Supplemental Environmental Impact Statement (FSEIS) on Management of Habitat for Late Successional and Old Growth Forest Related Species Within the Range of the Northern Spotted Owl (Northwest Forest Plan (NFP))* and its Record of Decision (Interagency 1994).

A watershed analysis module which documents compliance with Aquatic Conservation Strategy (ACS) objectives for the REO Fifth Field watershed No. 1710030401 is included in the South Fork Coos Watershed Analysis (USDI BLM 1999b). The module for the REO Fifth Field watershed No. 1710030504 is included in the East Fork Coquille Watershed Analysis (USDI BLM 1999a).

These documents are available for review at the Coos Bay and North Bend Public Libraries, the Coos Bay District Office of the BLM, the Coos Bay District's Internet Home Page at <http://www.or.blm.gov/coosbay>, and the Oregon State Office of the BLM in Portland, Oregon.

The analysis file for this EA, containing the Interdisciplinary team meeting notes, specialists' reports, silvicultural prescriptions, stand exam data, etc., is located at the Coos Bay District Office, and is hereby incorporated by reference.

The primary scoping process consisted of an interdisciplinary team defining the issues and alternatives that would be examined in detail in the EA. The public was informed of this planned EA through the Coos Bay District's *Planning Update* which was sent to individuals and organizations on the District's mailing list and was also available the Coos Bay District Internet Home Page. There was

no response by the public to the public scoping.

Management Objectives

- " Produce a sustainable supply of timber and other forest commodities to provide jobs and contribute to community stability.
- " Work toward meeting the Coos Bay District's Allowable Sale Quantity (ASQ) for Fiscal Years 2000, 2002, and beyond as identified in the *Coos Bay District RMP* ROD (USDI BLM 1995) and the *Northwest Forest Plan* (Interagency 1994).
- " Maintain habitat connectivity (along with other land use allocations such as Riparian Reserves) between Late-Successional Reserves.
- " Provide habitats for a variety of organisms associated with both late-successional and early-successional habitat.
- " Provide for important ecological functions such as dispersal of organisms, a carry-over of some species from one stand to the next, and maintenance of ecologically valuable structural components such as down logs, snags, and large trees.
- " Work toward the goals established by the Transportation Management Objectives (TMO) for the South Fork Coos Watershed Analysis area (USDI BLM 1999b).
- " Meet Aquatic Conservation Strategy (ACS) objectives.

Alternatives Considered But Eliminated from Further Analysis

- " Commercial thinning and/or regeneration harvest opportunities were looked for in T.27 S., R.08 W., Section 4. This section is a Connectivity block. There was a commercial thinning opportunity in this section, it fell inside a 100 acre Northern Spotted Owl Core Area. While this does not preclude all timber management activities, the team decided to eliminate this area from further consideration because the stand was inside the core and the crown ratios were small and stand was not densely stocked. Regeneration harvest at this time would be infeasible because less than 25 percent of this section is late seral condition. According to the *Coos Bay District RMP* ROD (USDI BLM 1995) p. 28, 25 to 30 percent of each connectivity block will be maintained in late-successional forest at any point in time.
- " Helicopter logging of these units was suggested to avoid impact to any Survey and Manage sites that may be caused by road construction and yarding activities. Roads or yarding corridors will be located outside of Survey and Manage buffer areas to the extent feasible. All trees will be directionally felled and yarded away from these buffered areas. The large size of the timber coupled with the small size of the units makes helicopter logging a much less feasible option than conventional cable methods.
- " Unit 2 and 3 of Panther Creek and Unit 3 of Bear Gulch Regeneration Harvest were dropped due to location inside Riparian Reserves.

Chapter 2 - Alternatives Including the Proposed Action

This chapter describes the proposed action and alternatives.

No Action Alternative

Under the no action alternative, no forest management activities would occur at these specific locations. Since no volume would be produced to meet the District's ASQ, another area would be proposed for forest management activities to meet the objectives of the GFMA as detailed in the Coos Bay District RMP ROD (USDI BLM 1995).

Proposed Action

Under the Proposed Action, all units would be harvested with cable systems. Approximately 5600 feet of new road construction and 4100 feet of road renovation is proposed under these timber sales. There would be 2100 feet of new construction on BLM land, 300 feet of new construction across private land, and 3400 feet of renovation to existing roads across private land to access the Panther Creek Timber Sale. The Bear Gulch Timber Sale would include 1700 feet of new construction with 2200 feet of renovation, all across BLM land. All newly constructed roads in the proposed sale areas would be semipermanent, open for more than one season of use, and would be designed and constructed to minimize soil erosion. They will be restored to pre- road hydrologic function and treated for site productivity after harvest operations are complete. Approximately 1840 feet of existing road adjacent to Bear Gulch Unit 2 would also be restored to pre- road hydrologic function.

Table Two: Project Areas and Volumes

Sale	Unit	Location	. Acres	Volume/Acre	Volume
Panther Creek	1	27-8-2	14	44 mbf/acre	616 mbf
	4	27-8-2	28	44 mbf/acre	1232 mbf
Sub-total	2 units		42		1848 mbf
Bear Gulch	1	27-9-24	3	50 mbf/acre	150 mbf
	2	27-9-24	7	67 mbf/acre	469 mbf
	4	27-9-24 & 25	50	87 mbf/acre	4350 mbf
Sub-total	3 units		60 acres		4969 mbf
TOTAL	5 units		102 acres		6817 mbf for the two sales

Project Design Features

- " Full log suspension will be required over streams. Full and partial suspension will be required over all areas inside the units where possible. Lift trees may be required to achieve desired suspension.
- " The location, number, and width of yarding corridors through Riparian Reserves will be specified prior to yarding. Natural openings will be used as much as possible. Not more than 250 feet of yarding corridors would be allowed within any 1000 feet of stream. Maximum corridor width will be 50 feet, and corridors will be at least 50 feet apart.
- " Seven green conifer trees per acre will be retained on all harvest units. Retained trees will be

distributed in variable patterns to contribute to stand diversity. Further discussion and guidance on wildlife tree placement can be found in the Fire, Wildlife, and Survey & Manage Botany Reports located in the Analysis File.

- " Manage for 2 snags per acre on all units. All snags greater than 15" diameter-at-breast-height (dbh) and taller than ten feet that are classified as decay class 1 or 2 will be marked with an orange "S". If the pre-harvest snag counts for any of the units are below 2 snags per acre, then additional green trees 15" dbh or greater will be marked to make up the deficit. These trees will be distributed across the harvest units.
- " In accordance with the *Coos Bay District RMP ROD Standards and Guidelines* (USDI BLM 1995), an average of 120 linear feet of decay class 1 and 2 logs per acre will be retained over the cutting area and reflecting the species mix of the unit. All logs will be at least 16 inches in diameter at the large end, and 16 feet in length. Logs will be distributed throughout the cutting area, and not piled or concentrated in a few areas. All decay class 3, 4, and 5 logs will be retained on site.
- " All material overhanging the edges of landings will be pulled back and landings reshaped.
- " If newly constructed roads will be used with a dirt surface, haul will be restricted to the dry season. However, if newly constructed roads are rocked no seasonal restriction would apply.
- " Existing roads to be restored to pre- road hydrologic function in conjunction with the Bear Gulch timber sale will be approximately 1430 feet of 27-9-24.4 and 430 feet of 27-9-24.3 (See map located in Hydrology Report in the Analysis File)
- " If possible, pile the organic soil layer during the construction phase of road building and retrieve them when decommissioning the road.
- " Roads to be closed will have culverts pulled, will be subsoiled, ditchlines will be removed, intermediated waterbars will be placed where needed, grass seeded, mulched, fertilized and planted. Roads will be tank trapped to block passage.
- " All road cuts, landing areas, and fills will be seeded with native grass if available. If native grass seed is not available, an approved BLM seed mix will be used.
- " All trees will be directionally felled away from reserve areas, previous sale areas, riparian areas, wildlife trees, and snags as safety permits.
- " All existing down logs and conifer regeneration, including Pacific Yew, will be protected to the greatest extent possible from damage by falling, yarding and subsequent site preparation.
- " The timber sale contract will contain provisions for the appropriate disposal of wastes and hazardous materials handling. State of Oregon Department of Environmental Quality (ODEQ 1998b) and Forest Practices (ODF 1998) guidelines for spill prevention and containment will apply to any sale contracts resulting from this EA. Site monitoring for solid and hazardous waste will be performed during the performance of this work in conjunction with normal contract administration. Any spills or releases resulting from operations shall be subject to the

Coos Bay District Hazardous Materials Management Contingency Plan (USDI BLM 1997).
Post-harvest road closures will reduce the potential sites for illegal dumping.

- " If Threatened and Endangered, Survey and Manage, Special Status, or Protection Buffer plant, animal or fish species are found in the sale units, management guidelines for the species will be implemented.
- " All contracts for the proposed action will include a standard Threatened and Endangered Species stipulation (special provision E-4).
- " To the greatest extent possible, hand-piled slash should be placed on closed roads and disturbed areas that have experienced any soil compaction to replace organic material that has been removed from the site.
- " To prevent the introduction and spread of noxious weeds during the contract period, machinery and equipment will be washed prior to entering contract areas, and will be required to stay within road right-of-ways.
- " Roads will be brushed prior to any harvest or road construction activities to help prevent the spread of existing noxious weeds. In the areas where noxious weeds are present, brushing will be done to allow for safe vehicle use while preventing contact with weed seed. If the harvest activities occur over multiple years, brushing of the weeds may need to be done each year activities occur.
- " Minimize creation of sites suitable for weed establishment and seed all disturbed sites (i.e. retain shade where possible, remove any noxious weed plants, minimize disturbance of seed beds, minimize soil disturbance, and as soon as possible re-establish vegetation on all bare ground to minimize weed spread).
- " Road construction and maintenance will use weed-free gravel and fill material, control any noxious weeds present, and seed and mulch all disturbed ground.
- " Consultation with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) will be required before advertisement of the sales.
- " Any substantial changes to the Proposed Action will require further review and clearance.
- " If any important cultural materials are encountered during the project, all work in the vicinity will stop and the District Archaeologist will be notified at once. Native American Grave Protection and Repatriation Act (43 CFR Part 10; IM OR-97-052) notification requirements will be followed.
- " Pre and post-harvest snag monitoring will be done on the Bear Gulch Timber Sale.

Chapter 3 - Affected Environment

The description of the existing conditions reflects the application of the No Action Alternative and is the baseline for measuring the effects of the Proposed Action.

Vegetation

The late-successional forest habitat that remains in this subwatershed is scattered in small, highly fragmented patches, mingled with large blocks of early and mid-successional habitats on private lands, which are typically even-aged, single-canopy conifer stands with a minor hardwood component.

The proposed units are comprised primarily of mature Douglas-fir and incense cedar overstory and western hemlock understory. Other species occurring in the understory are: Pacific madrone, golden chinkapin, big-leaf maple, Oregon-myrtle, vine maple, Pacific yew, red huckleberry, and Oregon grape. In areas where the dominant canopy is broken, Pacific madrone and big-leaf maple dominate. Panther Creek stand ages range from 40-100 years. The Bear Gulch stands average age is 300 years.

The proposed sales are located in 5th field watersheds which meet the *Coos Bay District RMP* ROD (USDI BLM 1995) requirement for currently having over 15 percent of federal ownership in late-successional forest.

Table Three: Fifteen Percent Rule by REO Fifth Field Watershed Federal Ownership

REO Fifth Field Watershed	Total Acres	Regeneration Harvest Acres	Federal Acres	Federal Acres Over 80 Years	Percent Federal Acres Over 80 Years
1710030401 South Fork Coos River	160,385	72	32,731	13,356	41%
				• 13,284	41%
1710030504 East Fork Coquille	85,785	30	43,134	17,606	40%
				• 17,576	40%

Port Orford Cedar

The proposed project areas are within the natural range of Port Orford cedar. No Port Orford Cedar was found in any of the project areas or along the haul routes. (Port Orford cedar Report is located in the Analysis File.)

Noxious Weeds

Scattered scotch broom exists along the haul routes. No noxious weeds currently exist on site at Panther Creek or Bear Gulch Timber Sales. These sites are a high priority for protection from the introduction and spread of noxious weeds through management activities. (Noxious Weed Report is located in the Analysis File)

S&M Plant Species

Many of the stands surrounding the proposed projects are of a younger age class than the stands proposed for harvest. There are documented locations of *Alletropa virgata*, a Survey and Manage Strategy 1 species, in the northern portion (Unit 1) of Panther Creek. Some of these plants fall within

the Riparian Reserve. See the pre-field review in the appendix for more information on which species are likely to occur (Botany Report is located in the Analysis File).

Wildlife Species

Special Status Species

Northern Spotted Owl: None of the units are within 0.25 miles (disturbance) of a northern spotted owl site center. The Panther Creek sale is within 1.5 miles (habitat) of a known site center. The Bear Gulch sale is located within a Critical Habitat Unit for the owl. The sales involve the removal of 107 acres (Bear Gulch - 59 acres and Panther Creek - 48 acres) of suitable habitat for the northern spotted owl.

Marbled Murrelet: None of the units are within a Critical Habitat Area for the murrelet. The sales involve the removal of 107 acres (Bear Gulch - 59 acres and Panther Creek - 48 acres) of suitable habitat for the marbled murrelet.

Panther Creek and Bear Gulch sales will be surveyed according to murrelet protocol in 1998 and 1999. These surveys must be conducted before the units are advertised for sale. A unit will be dropped from the sale plan and all contiguous existing and a recruitment habitat within a 0.5 mile radius will be protected if occupied behavior is detected during a protocol survey. There will be no suitable unsurveyed habitat within a 0.25 miles of the units, as the units will be monitored to protocol.

Other Bird Species: The units are not within 0.25 or 0.50 miles (line of site) of any bald eagle nest or other key feature. Other special status species which could occur in the vicinity of the proposed harvest are listed in *Coos Bay District RMP* ROD (USDI BLM 1995, Appendix C). With the exception of the northern pygmy owl, there is no documentation of the presence of these species within the harvest areas.

Surveys for northern goshawks will be completed on both sale areas if there is adequate funding. Surveys are not required for goshawks on all lands within the range of the northern spotted owl; however, they are recommended (BLM Instruction Memorandum OR-98-12, expires 9/30/99). The Federal status for the northern goshawk is a Species of Concern and the State status is Sensitive. Nests have been located in the Coast Range by the Roseburg BLM and the sale areas contain suitable nesting habitat.

Mammals: The western gray squirrel and white footed vole could occur in the area though no sightings have been recorded. The white footed vole is strongly associated with riparian alder habitat along small streams.

The Bear Gulch units would provide suitable habitat for the American marten and possibly the Pacific fisher, if the habitat were more contiguous. The snags and down wood in these late-successional stands would provide the structure required by the marten. There is not contiguous suitable habitat to the older stands in the adjacent Late-Successional Reserve; however, so the area may not provide a large enough home range for these two species. The marten's normal home range is 1 square mile though they may range as far as 15 miles. The fisher's normal home range is 10 square miles.

The harvest area is outside the known range of the ringtail. Bat species that could occur in the area and are also listed as Federal Species of Concern are: Yuma myotis, long-legged myotis, fringed myotis, long-eared myotis, and Townsend's big-eared bat (Csuti et al. 1997).

Amphibian and Reptiles: The units contain habitat that could be utilized by five Special Status amphibian species and two reptile species. Surveys were not conducted for these species, and none were seen during field reviews. Special Status Species which may be associated with the aquatic system include: southern torrent salamander, red-legged frog, and tailed frog. Western toads are associated with forest or brush areas, and utilize shallow, slow water for breeding. Decayed down logs, preferably with bark intact, provide habitat for the clouded salamander. The units are most likely out of the range of the common kingsnake, but sharptail snakes may be present.

Northwest Forest Plan Survey and Manage Species

Red Tree Vole: The red tree vole protocol was used to evaluate the REO 5th field watersheds for suitable habitat. Both watersheds contain more than 10 percent Federal ownership. The South Fork Coos River (1710030401) REO 5th field watershed contains 54 percent suitable red tree vole habitat which exceeds the 40 percent minimum habitat threshold. The East Fork Coquille (1710030504) REO 5th field watershed contains 55 percent suitable red tree vole habitat. According to the protocol, no field surveys will need to be conducted. Data on stand age and composition used for the screening process was from the Coos Bay District Forest Operations Inventory information dated November, 1997.

Mollusks: Mollusk protocol surveys discovered four mollusk sites in the Panther Creek Timber Sale (2 *Prophysaon coeruleum*, 1 *Megomphix hemphilli*, and 1 *Prophysaon dubium*). One of the *Prophysaon coeruleum* sites is near the main stem of Panther Creek which has a 440' buffer and is inside the Riparian Reserve. The remaining three sites will be managed according to new management guidelines being developed.

Mollusk protocol surveys for Bear Gulch Regeneration Harvest have not been completed. This proposed sale will not proceed until protocol surveys have been accomplished. Upon completion, all discovery sites will be managed according to new management guidelines being developed.

Del Norte Salamander: Both sales are at the northernmost edge of a 25-mile survey range from an established known Del Norte salamander site. The units will require initial habitat searches and then protocol searches if suitable habitat is located and managed according to new management guidelines being developed.

Northwest Forest Plan Protection Buffer Species

Pre-harvest protocol surveys for great grey owls are not required on the Coos Bay District. In addition, the sale units do not meet the suitable habitat characteristics as the sales are not at elevations above 3,000 feet, and there are no natural meadows that are greater than 10 acres within 1,000 feet of the units.

Standard and Guideline for Protection of Bat Roost Structures: The units do not contain caves, mines, or abandoned wooden bridges or buildings that could be providing bat habitat and would require additional protection (USDI BLM 1995, *Standards and Guidelines* C-43). Species that would utilize these structures and that could occur in the area are fringed myotis, long-eared myotis, long-legged myotis and Townsend's big-eared bat. The thick bark of older trees and bark and cavities in snags within the units could be providing habitat for the ten bat species that can be found in the Western Oregon Coast Range.

Habitat for other Wildlife Species

General Information: The units are providing habitat for a variety of wildlife species associated with late-successional forests that are not classified as Special Status Species. Due to the size of the units, most wildlife residing in these forest stands have small home ranges, or use the areas during part of their life cycle.

The understory provides good vertical structure for many bird species including winter wrens, thrushes, warblers, rufous-sided towhee, and dark-eyed junco. The understory also provides nesting opportunities for many neotropical migratory bird species.

Big game trails, bedding sites, and scat are located throughout all the units. The locations of the units provide good habitat for big game due to the adjacent younger stands that provide forage, and the proposed harvest units that provide thermal and hiding cover. Thermal cover is provided by stands that are at least 40 feet high and have a tree canopy cover of at least 70 percent (Brown 1985). Hiding cover is provided when the vegetation is capable of hiding 90 percent of a standing adult deer or elk at 200 feet or less (Brown 1985).

The units contain habitat that could be utilized by reptiles and amphibians. In general, decayed down logs (preferably with bark intact) are providing habitat for the clouded salamander (Special Status Species), ensatina, and western redback salamander. Dunn's salamander is a terrestrial salamander that utilizes the rocky edge of forested streams or permanently wet talus. Species associated with the aquatic system include: northwestern salamander, Pacific giant salamander, southern torrent salamander, roughskin newt, red-legged frog, tailed frog, Pacific tree frog, and western toad. The southern torrent salamander, red-legged frog, tailed frog and western toad are Special Status Species.

Special habitats: Special habitats that are used by wildlife include cliffs, talus, wet meadows, bogs and other unique areas. The talus slopes considered to be suitable habitat will be surveyed for the presence of Del Norte salamanders. No other special habitats were found inside any of the units. All riparian areas would be reserved within the Riparian Reserves of the proposed units.

Snags and Down Wood: Bear Gulch unit 1 was surveyed for snags and down wood using a 100 percent sampling method in 1998. The unit contained 3.3 snags per acre and 23 linear feet per acre of suitable down logs that met *Coos Bay District RMP* ROD (USDI BLM 1995) standards for class 1's and 2's. Bear Gulch unit 4 will also be surveyed for pre-harvest levels of snags and down wood.

Snags provide potential breeding habitat for 76 wildlife species and feeding habitat for 19 species (Brown 1985, Appendix 13). Special Status or Survey and Manage species that utilize snags include: bald eagle, northern spotted owl, Northern pygmy owl, pileated woodpecker, purple martin, western bluebird, silver-haired bat, fringed myotis, long-eared bat, long-legged myotis, American marten, and Pacific fisher (USDI BLM 1994, Appendix T).

For this area, the primary cavity nesters are the red-breasted sapsucker, red-breasted nuthatch, northern flicker, and downy, hairy, and pileated woodpecker. The target for maintaining a 40 percent population level of primary cavity nesters in this area is 1.5 snags per acre (Marcot 1991). The primary excavator species have minimum snag diameters and stage of decay requirements that must be met in conjunction with total numbers of snags on the landscape (Table Four). For example, retaining 3 or 4 or more snags per acre following a timber harvest would not meet the 40 percent population objective if the snags were all decay class 4 or 5.

Table Four: Snag Requirements by Size and Decay Class to Meet the Forty Percent Potential Population Levels of Cavity Nesting Birds (Marcot 1991)

Snag Outside Bark DBH Class (inches)	Number of Snags/100 Acres by Decay Class		Total Snags/10 0 Acres	Total Snags/4 0 Acres	Hard Snags/ 1 Acre	Soft Snags/1 Acre	Total Snags/1 Acre
	Hard Snags (Decay Class 2- 3)	Soft Snags (Decay Class 4- 5)					
11+	3	3	6	2.4	0.03	0.03	0.06
15+	95	0	95	38.0	0.95	0.00	.95
17+	40	10	50	20.0	0.40	0.10	0.50
25+	2	0	2	0.8	0.02	0.00	0.02
Totals:	140	13	153	61.2	1.40	0.13	1.53

In general, cavity nesters can utilize snags in larger diameter classes, but they cannot utilize snags below their minimum diameter requirement. On a per acre basis, snags that are 11 inch diameter-at-breast-height (dbh) and smaller are not a major component of cavity nester needs, as only 0.06 snags per acre are utilized. The major requirement is hard snags that are at least 15 inch dbh (average of 1 per acre). Another way to look at this is that 92 percent of the hard/soft requirement is for hard snags. Retaining hard snags will also give more assurance that the required snag numbers will be retained throughout the 30-year time period designated in the *Coos Bay District RMP* ROD (USDI BLM 1995, pg. 28).

Late-successional characteristics: The Bear Gulch units are stands that contain old growth characteristics. The stands are approximately 400 years old and contain high structural diversity. Bear Gulch unit 4 is a good example of the type of stand that the District is trying to achieve in the LSR land use allocation. The unit has snags scattered throughout in all decay classes and also has snags in numerous clumps. There is also down wood in varying decay classes throughout the unit. There is a diverse understory of tree species including a high percentage of yew trees. There is a high degree of mature hemlock trees that are uncommon to find in the subwatershed as most of these stand types have been harvested.

Harvest Schedule: The Draft East Fork Coquille Watershed Analysis (USDI BLM 1999a) prioritized units for regeneration harvest. The southern half of Bear Gulch unit 4 was classified as a Priority 1 implying that the area would be available for harvest during the first entry into the watershed.

Hydrology

The hydrology of the area is driven by precipitation in the form of rain. The area may occasionally receive snow, but the quantity and duration of the snow does not normally produce rain-on-snow events. The peak flows, low flows, annual flows and groundwater levels are all dependent on the amount, intensity and distribution of rainfall. The close correlation between precipitation and runoff indicates that this system rapidly translates rainfall into runoff due to: a high drainage density, low bedrock permeability, coarse textured, shallow soils, high precipitation totals, and steep slopes.

The Panther Creek sale is made up of 2 units. Unit 1 drains to the south into Panther Creek. Unit 4 drains to the north and west into Panther Creek and a 1st order tributary of Panther Creek. The Bear

Gulch sale is made up of 3 units. Unit 1 drains to the south into Bear Gulch. Units 2 and 4 drain to the north and west into 1st and 2nd order tributaries of Bear Gulch.

Panther Creek and Bear Gulch and all of the associated tributaries are high gradient, step/pool, debris torrent systems that have been surveyed for the presence of fish and the inception point of each of the channels has been identified on the ground to determine the starting point of the riparian reserve. The reserve widths will be one or two site potential tree heights (220 or 440 feet) depending on the presence or absence of fish. These channels do not have an inner gorge by definition or an active flood plain and the distance dominated by riparian vegetation is also less than a site potential tree height. A 220 or 440 foot riparian reserve width will be applied on each side of the stream channel in accordance with the *Coos Bay District RMP* ROD (USDI BLM 1995). (Hydrology Report is located in the Analysis File)

Fish Species/Habitats and Water Quality, Wetlands and Riparian Habitats

With the exception of the south facing slope of Unit 4 of Bear Gulch, the proposed timber sale units are in the Panther Creek and Bear Gulch Creek drainages, which are tributaries to Williams River in the South Fork Coos River REO 5th Field Watershed (HUC# 1710030401). The southern portion of Bear Gulch Unit 4 drains into the East Fork Coquille REO 5th Field Watershed (HUC# 1710030504).

A stream habitat inventory was conducted on Panther Creek in 1993, but the survey ended at an impassable waterfall approximately one mile downstream from the proposed project area (ODFW 1993). No stream habitat inventories are available for Bear Gulch Creek or the reach of Panther Creek in the vicinity of the project area. Field surveys, however, were conducted during the winter of 1999 to determine the range of fish distribution and evaluate the instream and riparian conditions of the aquatic resources within and adjacent to the project area boundaries.

The Riparian Reserve areas of all of the aquatic resources within the proposed unit boundaries are intact with no evidence of management-related activities having occurred in the stream channels, and no roads are present within the Riparian Reserves of the perennial stream channels.

Panther Creek

The upper limit of anadromous fish distribution for coho salmon, anadromous (sea run) cutthroat trout, and steelhead trout is at a 14 meter-high waterfall approximately 1 mile downstream of the western boundary of the project area (ODFW 1993). Resident cutthroat trout inhabit all of main-stem Panther Creek within the project area boundaries (between Units 1 and 4), but the other tributaries to Panther Creek within the project area are high gradient and too small to be fish-bearing at any time.

The Draft 1998 303(d) list of Water Quality Limited Streams for Oregon (ODEQ 1998a) lists the Williams River as exceeding the State criteria for water temperature. According to data collected in 1996, the 7 day maximum mean for the Williams River was 72.7 °F, which exceeds the standard of 64 °F. During that same period, however, BLM monitored water temperatures in Panther Creek approximately ½ mile upstream from it's confluence with the Williams River (more than 2 miles downstream of the project area), and the peak 7-day maximum temperature was 57.2 °F (USDI BLM 1999b). The results of the monitoring indicate that Panther Creek does not exceed the state water quality standard for temperature.

According to stream habitat inventories (ODFW 1993), the overall condition rating for stream habitat in

the lower reaches of Panther Creek is “fair to good” (USDI BLM 1999b). No stream habitat inventory data is available for the upper portions of Panther Creek in the vicinity of the proposed project.

Bear Gulch Creek

No water quality information or stream habitat inventories are available for Bear Gulch Creek.

Units 1 and 2: The nearest fish-bearing stream is the main-stem of Bear Gulch Creek, which is approximately one-third mile to the east. The stream flowing in an easterly direction north of Unit 1 is high gradient and inaccessible to fish.

Unit 4: No streams capable of supporting fish are present within the boundaries of this unit, and the nearest fish-bearing stream reach is within mainstem Bear Gulch Creek approximately one-half mile to the north. The south slope of this unit drains into the East Fork Coquille watershed, but no fish bearing streams are within one mile of the unit boundary. The nearest stream reach inhabited by anadromous salmonids is over seven miles downstream.

Fisheries - Special Status Fish

The following lists summarizes the special status fish species known to occur in the vicinity of the proposed project. It is BLM policy to treat special status species as though they were a listed species, and to conduct informal conferencing with NMFS on actions that may affect special status species or their habitats.

- C Oregon Coast coho salmon, which encompasses the range of this species north of Cape Blanco, were designated as “Candidate” species by the National Marine Fisheries Service on April 25, 1997, and subsequently listed as “Threatened” on August 10, 1998. Coho salmon inhabit the Williams River and the lower reaches of Panther Creek, but the nearest populations are more than 1 mile downstream from the timber sale boundaries.
- C At the time of the writing of this EA, steelhead trout and coastal cutthroat trout were listed as “Candidate” species. The nearest occurrence of these species to the proposed harvest units are a minimum of 1 mile downstream from Panther Creek Unit 4.

Cultural Resources and Native American Religious Concerns

Review of project documentation and records check shows no known cultural resources in the vicinity of this project. Land in this project has Low or Negligible potential to contain cultural properties and is exempt from field review requirements, as stated in Appendix D (Coast Range Inventory Plan) of the Oregon cultural resource management Protocol. A field visit may be made after delineation of final project boundaries.

Soils

The Panther Creek and Bear Gulch Timber Sales are located in the Coast Range physiographical province. The geological materials associated with the soils of the area are developed from the Tyee Formation. The Tyee Formation is composed of rhythmically bedded sandstone and siltstone. The Tyee Formation tends to have high ground water in some areas, rapid runoff, steep slopes, and sharply alternating beds of sandstone and softer siltstones. The potential for slumps, debris and earth flows is intensified by these characteristics. Roads are most affected by these types of slope failures.

The soils found within the Panther Creek Timber Sale are the Preacher-Bohannon Complex, Orford Gravelly Silt Loam, Preacher-Bohannon-Digger Complex, and the Fernhaven-Digger Complex. Unit 2 and the north half of unit 4 of Bear Gulch Regeneration Harvest soils consist of Digger-Umpcoos-Rock Outcrop Association, Preacher-Bohannon Loams, and the Remote-Digger-Preacher Complex. The south half of Bear Gulch Unit 4 is a Milbury-Bohannon-Umpcoos association on 50 to 80% slopes. Specific soil data can be obtained from the Soil Survey of Coos County, Oregon, 1989 and the February 1994 Douglas County Area, Oregon Soil Inventory (Unpublished). (Soils Report is located in the Analysis File).

Environmental Justice

The project areas are away from any population center and surrounded by private forest companies lands. There are no known special uses by any of the groups of consideration.

Chapter 4 - Environmental Consequences

This chapter is organized by resources.

Analysis of the No Action and Proposed Action Alternatives has shown no impacts to Areas of Critical Environmental Concern (ACEC), prime or unique farm lands, flood plains, wetlands, Wild and Scenic Rivers, or wilderness values.

Impacts on Vegetation

No Action Alternative

The No Action Alternative would allow for the proposed stands to continue the late-seral stage of development. This would lead to a gradual decline of the existing dominant, Douglas-fir, overstory with the replacement of younger, smaller, less vigorous, shade tolerant species, such as western hemlock and western red cedar. Since Douglas-fir will outlast any other species in the understory except red cedar, without some type of disturbance such as windthrow, fire, or logging, establishment of conifer reproductions in hardwood and brush dominated understories is not likely.

Proposed Action

Regeneration harvest will result in removing most of the overstory trees. The stands will then be replanted with conifer seedlings following site preparation. After harvest, perennial vegetation growth is promoted due to the increased availability of light and nutrients. Once the conifer seedlings have overtopped the existing competing species, they will grow at a relatively equal and constant rate, dominating the landscape once again over time. There will also be a large number of annual weeds invading these sites. (See Silviculture Prescription located in the analysis file.)

Harvesting the stands will increase its vulnerability to infestation by exotics, which thrive in the resulting disturbed soils and brighter light conditions. The canopy will eventually close, however, shading out weedy species. Some herbaceous species and epiphytes may have reduced vigor from the alteration of the microclimate, while some species of herbs and shrubs will flourish from the increased sunlight. Eventually, as the forest grows, conditions will come to approximate the current condition.

Cumulative impacts include previous activities, such as timber harvest, road construction, and silvicultural activities, in relation to the effect on plants that are dependant upon late-successional habitats. Many of the stands adjacent to the proposed project area are in an early to mid-seral stage. The stands in private ownership are expected to be on a short rotation, negating the probability of these forest stands reaching a late-seral condition. Most of the private stands in the area have already been harvested.

Impacts on Port-Orford-cedar

No Action and Proposed Action Alternatives

There is no known Port-Orford-Cedar present on site or along the haul routes. Therefore there is no known direct, indirect, or cumulative impacts. Port-Orford-Cedar will not be a component of the regeneration.

Impacts on Noxious Weeds

No Action Alternative

There are no anticipated direct impacts of the No-Action Alternative. Both indirect and cumulative impacts could result from the continued presence and spread mechanisms of noxious weeds. Any natural disturbance could create a site suitable for weed establishment and survival.

Proposed Action

Direct impacts of noxious weed establishment could result from the management activity. Human activities and machinery increase the potential for the introduction of new weeds and spread of existing weeds. In addition, exposing bare mineral soil provides potential sites for weed establishment. The incorporation of best management practices, however, should help prevent the introduction or establishment of weeds.

Impacts on Survey and Manage/Protection Buffer Plant Species

No Action Alternative

Without harvest, these stands will continue to follow successional stages that are typical of forests in the western hemlock vegetation zone.

Proposed Action

Harvesting the stands will increase their vulnerability to infestation by exotics, which thrive in the resulting disturbed soils and brighter light conditions. However, the canopy will eventually close, shading out weedy species. Some herbaceous species and epiphytes may have reduced vigor from the altering of the microclimate, while some species of herbs and shrubs will flourish from the increased sunlight.

Removing portions of older forest stands in Panther Creek will result in only moderate impact on the amount of mid to late seral habitat left, as the riparian reserves considerably limit the amount of the stand available for harvest. Removal of Bear Gulch timber will, however, considerably reduce the small amount of old growth habitat in the Panther Creek Subwatershed. The green reserve trees will provide inoculum to the new stand that should allow epiphytic lichens and bryophytes to reach current levels of species richness and abundance sooner than if these trees were removed.

Current knowledge of the biology of *Alletropa virgata* indicates that the existing population (Panther Creek Unit 1) would be harmed by the removal of timber. These plants probably require at least 70% canopy closure and a retention of host trees and large logs. Piling of logging residue and burning, as opposed to broadcast burning, will protect the habitat structures necessary for *Alletropa*'s survival.

Impacts on Survey and Manage Mollusk Species

No Action Alternative

There should be no direct or indirect impacts to mollusks from the No Action Alternative. Since these scattered units are small fragmented patches among large blocks of early and mid seral stages, they may serve as major population centers or refugia for mollusks to repopulate the surrounding units. Surrounding units may repopulate at a faster rate due to this possibility.

Proposed Action

Little is known of the life cycles and requirements of the mollusks identified on the Coos Bay District. These species were assumed to be old growth associated in the *Coos Bay District RMP* ROD (USDI BLM 1995); however, surveys of second growth conifer and hardwood stands between 25 and 50 years in age have shown that they are common and well dispersed throughout the forested land base.

Localized direct and indirect impacts are expected to result from physical logging damaging to individuals and habitat modification. By identifying and protecting known locations we will provide both habitat for and protection of individuals. This should maintain viable populations from which to repopulate the regenerated stand. Adverse cumulative impacts are not expected but rather the combined effects of riparian buffers, species buffers, down log, green tree, snag retention, and best management practices should allow for retention of habitats, populations, and key habitat features throughout the unit. This will aid in increased population numbers, and the ability to disperse as the stand regenerates.

Impacts on Wildlife

No Action Alternative

There would be no significant negative consequences for wildlife if this No Action Alternative were adopted. If the units were not harvested, they would continue to provide habitat for the wildlife species listed in the Affected Environment section. The stands would continue to age and increase in late-successional characteristics. Timber from other units would be proposed for harvest in order to meet the harvest objectives of the *Coos Bay District RMP* ROD (USDI BLM 1995).

Proposed Action

Wildlife Species and Habitat: Under the Proposed Action, 102 acres would be harvested from 5 units. There are two major impacts associated with the harvest. The first would be a change from late to early seral stage forest. The second is the loss of habitat characteristics associated with older stands including the existing quality and quantity of down wood in all decay classes, snags, and vertical structure. Harvest could also cause direct mortality and the loss of habitat for breeding, feeding, dispersal or shelter. Birds and/or their nests could be destroyed if harvest occurs during the spring or summer. Other species affected by the sales would be elk and deer due to the loss of thermal and hiding cover; however, after harvest early seral vegetation would provide foraging areas for large game.

Harvesting the Bear Gulch stands would remove 59 acres of suitable habitat for both the northern spotted owl and marbled murrelet. The proposed action would also remove suitable habitat for other Special Status species and Survey and Manage species. This could reduce the number of individuals in the sale areas but would not affect the long-term viability of species as other land use designations in the *Coos Bay District RMP* ROD (USDI BLM 1995) are expected to provide sufficient habitat. Negative effects of regeneration harvests in the GFMA on wildlife have been analyzed in the *Northwest Forest Plan* (Interagency 1994) and *Coos Bay District RMP* ROD (USDI BLM 1995).

Consultation: The proposed harvest would be a "may affect, likely to adversely affect" situation for the northern spotted owl and the marbled murrelet. The proposed Panther Creek regeneration harvest was included in the U.S. Fish and Wildlife Service (USFWS) Biological Opinion dated September 22, 1998(Ref: 1-7-98-F-320). Consultation with the USFWS will be required for the Bear Gulch sale before it is advertised. All Project Design Criteria, and Terms and Conditions from the USFWS Biological Opinion that are related to timber harvests would need to be implemented. The harvest should not significantly negatively effect any other Special Status Species as there was no presence of special habitats or documented sighting of these species.

Site Preparation - Including Impacts on Down Wood: From a wildlife standpoint, piling and burning would be the preferred method of site preparation verses broadcast burning. Piling would reduce the

impact of the burn by placing the material away from snags, down wood, and Survey and Manage buffers. The units did not contain a high percentage of understory brushy/woody species so plantability should not be negatively impacted by the use of alternative site preparation methods. Bear Gulch has not been surveyed for Survey and Manage species, but there is a high probability of occurrence based on survey results from the adjacent Deadhorse Commercial Thinning units. Bear Gulch has scattered snags and down wood in all decay classes throughout the unit that would be impacted by a broadcast burn.

Burning can impact down logs by: bark charring, removal, or hardening; and removal of associated litter/sloughed bark. One of the most important features of decay class 1 and 2 down wood is that the bark is intact. The pattern under the bark provides valleys and pockets for small wildlife to occupy. The bark holds in moisture, which creates a suitable habitat for salamanders and invertebrates. If the bark is removed, or fire charred, the logs' water holding capacity and associated habitat characteristics are diminished; however broken pieces of woody debris provide equivalent habitat for many of these organisms, particularly salamanders.

Wildlife trees should be clumped around existing decay class 3 through 5 wood when possible to alleviate impacts from harvest and site preparation activities, and to create a moist microclimate after harvest.

Snags: Snags may be lost due to fire consumption, harvest operations, cutting for safety concerns, or the quality may be decreased through bark charring and/or sloughing from burning. The 40 percent requirement for cavity-nesting birds in the area is 1.5 snags per acre. It is anticipated that there would be snag loss due to harvest and site preparation activities. To help alleviate this loss, snags will be managed at a level of 2 per acre prior to harvest assuming a loss of 0.5 snags per acre due to harvest activities. Snag tallies would be needed to calculate how many are present on each unit. All snags greater than 15" dbh and ten feet tall would be marked with an orange "S." If the count for the unit is below 2 snags per acre (decay class 1 and 2 only), then additional green trees would be marked to make up the deficit. The 15-inch dbh would be used as a minimum as the majority of snag requirements would be met by this diameter class (or larger diameters) as shown in Table 1. Snags in the later deterioration stages are most likely to be lost during harvest and site preparation. Reserving green trees will not make up for this loss in the short term; however, clumping wildlife trees around existing snags would help to buffer the snags during the harvest operation.

An evaluation was conducted of the adjacent stands for the guideline of meeting snag requirements within a 40-acre area of the unit (USDI BLM 1995, pg. 27). BLM stands in the area that are between 1 and 16 years of age would contain 2 wildlife trees per acre, as the BLM wildlife tree policy started in 1983. Snag recruitment from these wildlife trees will occur over the long term. No additional snags need to be retained on the Bear Gulch units to meet the 40-acre requirement. The Bear Gulch units 1 and 2 have young stands around them that were harvested after 1983 and have wildlife trees that will provide for snag recruitment. The size of the Bear Gulch unit 4 (50 acres) would provide the required snags needed for its 40-acre area (snag surveys will indicate if additional snags need to be reserved). The area that was considered for each unit is shown in Figure 2. See Wildlife Report located in the Analysis File.

There are no other BLM stands adjacent to the Panther Creek Sale, so the units are the base area for evaluating the 40-acre guideline. Ensuring that we meet the snag requirements on the units (53 acres

total) would meet the intent of the guideline.

Riparian Reserves: The full interim riparian reserve widths would protect riparian dependent species. The intact Riparian Reserves for these sales, especially units with 440-foot riparian buffers, would still serve as late-seral habitat, however the size of this refugia would be reduced because of the adjacent sale areas. Riparian Reserves can be a sink for these late-successional species, assuming they can migrate to the reserves, and that the area is sufficient to meet their habitat needs of food, water, shelter and space. Currently, Bear Gulch Unit 1 and a portion of Panther Creek Unit 4 may require yarding through the Riparian Reserve.

Road Construction: New road construction and road renovation would not impact any known special wildlife habitats (i.e., meadow, cave, wetland). While the roads are open, wildlife could be impacted by human use of the road including increased vehicle use, poaching, and general harassment. Closing the roads would limit the length of time that wildlife may be disturbed. The *Coos Bay District RMP* ROD (USDI 1995) road density goal for Federal land in the area is 1.1 miles per section per watershed.

The current road density for the South Fork Coos River (1710030401) REO 5th field watershed is 2.8 miles per section (USDI BLM 1999b). The TMO process has not been completed for this subwatershed. Based on past TMO reviews, it is most likely that several roads would be recommended for closure which would slightly reduce the road density. As the regeneration harvest roads would be categorized as semi-permanent and would be closed after harvest, they would not increase long term road density for the watershed.

Cumulative Effects: If the proposed units are not harvested, the volume would be harvested from another location in order to meet the objectives of the *Coos Bay District RMP* ROD (USDI BLM 1995). Cumulative effects at the landscape scale have been mitigated for in the *Coos Bay District RMP* ROD (USDI BLM 1995) by the application of Land Use Allocations and Standard and Guidelines. However, cumulative impacts can still occur at the subwatershed level.

The older-aged stands in the GFMA (Bear Gulch in particular) are providing late-successional habitat for wildlife. When these units are harvested, the less mobile species, like salamanders, less mobile invertebrates, and small mammals may not be able to disperse to other suitable habitat areas in the GFMA or to the closest reserve area. There would be a negative impact of the loss of wildlife individuals that occur in the proposed harvest areas within the Panther Creek Subwatershed.

There would be a cumulative negative impact of the loss of these late-successional forest stands. The Bear Gulch units are the last stands of mature timber (classified as 80 years and older) in the Bear Gulch drainage, and adjacent drainages. Figure 3 (attached) depicts the location of stands older than 80 years of age in the proposed harvest areas by drainage. It can be seen that the units are isolated patches of late-successional habitat, and their harvest will move the location of the closest late-successional habitat into T. 27 S., R. 8 W., Section 22. Except for Riparian Reserves, the remaining stands in the Bear Gulch drainage would be under 80 years of age on both BLM and private land.

At the District level, as shown in Table 2, 4.2 percent of the acreage is 300 years of age or older. Harvesting the 59 acres of the Bear Gulch sale would lower the total of these stands to 13,932 acres,

although the percentage would not change (it would still be at 4.2 percent of total District acres).

Though this stand is in the GFMA, its age and structural characteristics need to be considered. Only 4.2% of the Coos Bay District, regardless of land use allocation, supports stands over 300 years of age (Table 2).

Table Five: Stand Age by Acre and Percent of Forested Stands on the Coos Bay District Regardless of Land Use Allocation ¹

Stand Age	Forested Acres	Percent of District Acreage
80 - 119	117,778	35.7
120 - 199	87,117	26.4
200 - 399	46,953	14.2
300+	13,991	4.2
Total	265,839	80.5

¹ Total District acres = 329,679 (RMP ROD 1995, pg 1), forested acres from FOI (Dave Fauss, personal communication)

Any significant changes to the Proposed Action will require further review and/or clearance.

Impacts on Hydrology (Water Quality) and Channel Morphology

No Action Alternative

Under the no action alternative no direct, indirect or cumulative effects on the hydrology of the drainages will occur. The drainages will continue to function as a hydrologically mature areas.

Proposed Action

Direct Impacts:

This alternative will affect the hydrology of the streams and tributaries within the project area for a period of 15-30 years. Increases in the annual yield, low flows, and the spring and fall peak flows are expected due to the increase in the amount of water available because of the removal of vegetation and the corresponding reduction in evapotranspiration losses during the spring and fall. These increased spring and fall peaks, however, are still considerably smaller than the peaks that typically occur during large winter storms. The increase in peak flows, however, will not have a detrimental affect on aquatic resources and increases in annual and low flows may be beneficial because more water will be available during the critical low flow season.

Indirect Impacts:

Any increase in flow is not expected to produce large amounts of sediment from channel down cutting due to the bedrock control of these systems. There is no change anticipated in any of the elements of the sediment regime in these systems. No stream crossings will be installed and all of the road construction is outside the Riparian Reserves and will be done in accordance with Best Management Practices.

Cumulative Impacts:

This alternative will have the effects listed above at the site scale. Any effects, even if quite large on a site, become increasing difficult to detect downstream because of fluctuations in flows from groundwater sources, tributaries, or timing and varying intensities of precipitation events. This natural variability is coupled with the fact that as small streams join and form increasingly large drainage networks, the ability of individual actions in small drainages to affect hydrology in the larger subwatersheds decreases. The magnitude of any affect is generally proportional to the area that is treated. Since these projects impact only 0.26% (71 acres out of 27471 acres) of the Panther Creek subwatershed, and 0.27% (35 acres out of 12874 acres) of the Upper East Fork Coquille subwatershed it is not possible to separate these cumulative effects from natural variability.

Impacts on Fisheries

No Action Alternative

No environmental consequences would occur under the No Action Alternative.

Proposed Action

Fish Populations - Special Status Fish:

In accordance with Section 7(a) of the Endangered Species Act of 1973 as amended (ESA), the Proposed Action has been referred for informal and formal consultation where appropriate to the U.S. National Marine Fisheries Service to seek concurrence with recommended determinations.

No significant affects to listed or proposed T&E fish species are expected to occur primarily due to the large intact Riparian Reserve network. At the time of the preparation of this EA, consultation with NMFS has not yet been completed, but will likely lead to a "may affect, not likely to adversely affect" (NLAA) determination for the Oregon Coast coho salmon and the subsequent issuance of an incidental take permit. The determination of effects will also likely conclude that the proposed action conforms with the *Northwest Forest Plan* (Interagency 1994), the Aquatic Conservation Strategy, NMFS' March 18, 1997, plan-level biological opinion, and the *Coos Bay District RMP* ROD Best Management Practices (USDI BLM 1995).

Fisheries: Aquatic Species and Habitats:

In accordance with the *Coos Bay District RMP* ROD (USDI BLM 1995), Riparian Reserves would be maintained to protect intermittent, fish-bearing, and perennial non fish-bearing streams. Riparian Reserve widths would be equal to the distance of two site-potential tree heights (440 foot slope distance for the South Fork Coos Watershed) on each side of the fish-bearing streams, and one site-potential tree (220 feet each side) for non-fish bearing perennial streams and intermittent streams. No harvest or road construction would occur in the riparian reserves, although yarding corridors would be created through some portions.

Direct and Indirect Affects:

Maintaining Riparian Reserves for all aquatic resources in accordance with the *Standards and Guidelines of the Northwest Forest Plan* (Interagency 1994) will ensure that fish, water quality, instream habitat conditions, and riparian processes are not measurably affected by the proposed project. Large wood recruitment will be maintained because the effectiveness of stream side forests to deliver large wood to the channel is low at distances greater than one tree height away from the channel (FEMAT 1993). Small organic input to the streams would be maintained because most leaf litter and other particulate matter originates within half a tree height away from a stream channel (FEMAT 1993). Increased sedimentation should not occur because no activity would impact stream bank integrity, no road construction will occur within the Riparian Reserves; 200 foot buffers (about one site potential tree) have been found to be effective in removing sediment in most situations (FEMAT 1993). Water temperatures should not be affected because, in the Oregon Coast Range, riparian buffers of 100 feet or more have been reported to provide as much shade as undisturbed old growth forests (FEMAT 1993).

Yarding corridors should not result in measurable effects on the aquatic or riparian systems as full suspension of logs over streams will be required and yarding widths will be kept to a minimum. Any impacts to the riparian reserves is expected to be limited to the breakage of a few tree tops, which will remain on site and subsequently provided additional woody habitat for aquatic and terrestrial species.

Cumulative Effects:

Because no impacts to fish populations or their habitat are expected as a result of the proposed action, no cumulative effects are anticipated.

Consistency with Aquatic Conservation Strategy Objectives

The Aquatic Conservation Strategy (ACS) was developed to restore and maintain the ecological health of watershed and aquatic ecosystems contained within them on public lands. The strategy would protect salmon and steelhead habitat on federal lands managed by the Forest Service and Bureau of Land Management within the range of Pacific Ocean anadromy (USDI BLM 1995, Standards and Guidelines, p. B-9).

The intent of the ACS is to maintain and restore aquatic habitats and the watershed functions and processes within the natural disturbance regime by prohibiting activities that retard or prevent attainment of the ACS objectives. The primary emphasis of the Standards and Guidelines for riparian reserves is restoration of the ecological processes and stream habitats that support riparian-dependant organisms.

The conservation strategy employs several tactics to approach the goal of maintaining the “natural” disturbance regime, but it is not possible to provide for the complete recovery of aquatic systems on federal lands within the range of the northern spotted owl within the next 100 years, and full recovery may take as long as 200 years.

The consistency of this project with ACS objectives will also be described in the May 1999 Biological Assessment, submitted to NMFS for consultation for Special Status Fish species.

Evaluation of Consistency with Aquatic Conservation Strategy Objectives

ACS OBJECTIVE 1 - Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations, and communities are uniquely adapted.

The project is limited to a regeneration harvest on Matrix lands. No road construction or timber harvest would occur within Riparian Reserves. Because all new road construction would be semi-permanent and additional existing roads would be fully decommissioned following project completion, road density in the project area will be decreased in the long-term. The provision of yarding corridors through Riparian Reserves would result in only minor gaps in the overstory canopy and not degrade the Riparian Reserve in the short- or long-term (ie. the Riparian Reserve system would continue to provide adequate shade, large woody debris recruitment, and habitat protection and connectivity).

The outcome of the regeneration harvest would mimic a stand-replacement fire and return the current stands to an early seral stage in upland areas outside of Riparian Reserves; thus providing a diversity of landscape-scale features, yet ensuring the protection of aquatic systems within and adjacent to the project area. On a landscape level, the watershed should begin to develop a patchwork of seral stages that approximates what was present prior to management influence.

Based on design features, the project should maintain the elements outlined in ACS Objective 1.

ACS OBJECTIVE 2 - Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact refugia. These network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species.

The project would maintain the current Riparian Reserves, providing a connected network of late successional habitat with spatial and temporal connectivity into the future. No permanent roads or culverts would obstruct routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species. Therefore, it is concluded this project is consistent with ACS Objective 2.

ACS OBJECTIVE 3 - Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.

The physical integrity of the aquatic system would be maintained by the Riparian Reserves established for all aquatic resources within the project area. No actions associated with the project are likely to affect stream banks, shorelines or existing bottom configurations. The design features for the project should maintain the elements outlined in ACS Objective 3. Therefore, the project would be consistent with this ACS Objective.

ACS OBJECTIVE 4 - Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.

The proposed action is not expected to impact water temperature, turbidity, or result in the release of hazardous materials. No harvest would occur in Riparian Reserves, and the minor canopy reduction resulting from yarding corridors should cause no measurable effects to water temperature. Increases to turbidity levels are not expected to occur as a result of harvest activities, road construction, road decommissioning, or the haul route.

Activities involving gas or diesel-powered machinery in close proximity to stream channels are not likely to occur. In the event that a release of hazardous materials does occur, the contractor would be required to have a hazardous materials action plan to contain and clean-up any spills. Mechanisms would be in place to respond quickly to the incident and minimize the likelihood of contamination of a waterway. Incorporating the design features described in this EA is expected maintain elements outlined in ACS Objective 4.

ACS OBJECTIVE 5 - Maintain and restore the sediment regime under which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.

Implementation of Best Management Practices (Coos Bay District RMP 1994) and Project Design Features should prevent increases to turbidity and fine sediment levels as a result of the project. The location and condition of roads for the anticipated haul route is not expected to result in delivery of fine sediment to fish bearing streams. Portions of the project area considered at high risk of landsliding would be protected as part of the Riparian Reserve network, and not influence the timing,

volume, rate or character of landslide events. Based on design features, the project should maintain elements outlined in ACS Objective 5.

ACS OBJECTIVE 6 - Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.

The hydrology of the area is driven by precipitation in the form of rain. The area may occasionally receive snow, but the quantity and duration of the snow does not normally produce rain-on-snow events. The project would affect the hydrology of the streams and tributaries within the project area for a period of 15-30 years. Increases in the annual yield, low flows, and the spring and fall peak flows are expected due to the increase in the amount of water available because of the removal of vegetation and the corresponding reduction in evapo-transpiration losses during the spring and fall. However, these increased spring and fall peaks are still considerably smaller than the peaks that typically occur during large winter storms. Therefore, the increase in peak flows would not have a detrimental affect, and increases in annual and low flows may be beneficial because more water would be available during the critical low flow season. Peak, summer, and annual flows are expected to remain within the range of natural variability for these stream types at both the 5th field watershed and site level scales.

ACS OBJECTIVE 7 - Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.

The proposed action would maintain the current Riparian Reserve network on federally administered lands. The timing, magnitude, variability and duration of floodplain inundation is expected to be maintained in the short- and long-term at both the site and 5th field watershed scales. Areas that are not currently connected with the floodplain would likely remain disconnected in the short-term and possibly in the long-term. However, this is highly dependent upon private actions within the watershed. No change in the current flow regime is anticipated. No road construction would occur within the Riparian Reserves. Based on design features, the proposed project should maintain the elements outlined in ACS Objective 7.

ACS OBJECTIVE 8 - Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.

The proposed action would maintain the current Riparian Reserve network on federally administered lands. The proposed action would not alter any streamside vegetation that would be expected to influence stream temperature at the site or 5th field watershed scales in the short- or long-term. By maintaining the Riparian Reserve network, adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, channel migration, and coarse woody debris recruitment is expected to be maintained on federal lands. Therefore, it is concluded the proposed project is consistent with ACS Objective 8.

ACS OBJECTIVE 9 - Maintain and restore habitat to support well-distributed populations of native

plant, invertebrate, and vertebrate riparian-dependent species.

The proposed action would maintain the current Riparian Reserve network and protect habitat to support well-distributed populations of native plant, invertebrate, and vertebrate riparian-dependent species in the short- and long-term. Therefore, it is concluded the proposed project would be consistent with the elements of ACS Objective 9.

Impacts on Cultural Resources and Native American Religious Concerns

No Action Alternative

No effects are anticipated from the No Action Alternative.

Proposed Action

There are no anticipated specific, direct, or indirect effects on cultural resources or Native American religious concerns from the proposed regeneration harvest of these units, largely because cultural resources are not known to exist in these units. The proposed action is not likely to expose, damage, or destroy any cultural resources. (Cultural Resources Report is located in the Analysis File)

Impacts on Solid and Hazardous Waste

No Action Alternative

No effects are anticipated from the No Action Alternative.

Proposed Action

No effects are anticipated from the proposed action, unless a release of hazardous materials occurs as a result of harvest operations. Depending upon the substance, amount, and environmental conditions in the area affected by a release, the impacts could range from minimal and short term to more extensive and longer lasting.

Minor amounts (less than 2 gallons) of diesel fuel, gasoline or hydraulic fluid leaking from heavy equipment onto a road surface, with little or no chance of migrating to surface or ground water before absorption or evaporation, would be an example of minimal impact.

If a petroleum substance is released at or above the State of Oregon reportable quantity of 42 gallons, or has the likelihood of reaching ground or surface water regardless of amount, it could cause from mild to more severe localized impact to the environment. This impact could range from localized contamination of soil and vegetation, to entry into surface water and subsequent toxic effects upon fisheries and aquatic life and /or habitat. The greater the quantity of material released, the more serious the effects are likely to be, coupled with variable conditions such as the location of the spill, seasonal water levels, flow velocity, and rainfall.

Proposed road closures will diminish the future potential for illegal dumping of solid and hazardous waste along roadsides and on landings.

The Proposed Action is subject to provisions of the Oregon Forest Practices (ODF 1998) section pertaining to Petroleum Product Precautions (OAR 629-57-3600) and Oregon Department of Environmental Quality Spills and Releases Rules (ODEQ 1998b, OAR 340-108). BLM Administrators shall monitor and report any spills utilizing the reporting procedures in the Coos Bay District Hazardous Materials Management Contingency Plan (USDI BLM 1997). (Hazardous Materials Report

is located in the Analysis File)

Impacts on Soils

No Action Alternative

No effects are anticipated from this alternative.

Proposed Action

Approximately 4100 feet of new road construction and 5600 feet of renovation is proposed under these timber sales. All of the road construction will be located on ridgetops so erosion and sedimentation would be minimal. Sedimentation from harvest activities would not be expected to enter streams. Some soil erosion from cutbank sloughing and from the road surface can be expected, especially from heavy rains during the first winter following construction, harvest and site preparation activities. The roads will be for semi-permanent use and will be closed following completion of harvesting. Decommissioning of the roads after regeneration harvest activities will include removal of any culverts and be subsoiled to recover the site for planting. Subsoiling the roadways to restore hydrologic function would be of no benefit to these ridgetop roadways. Only a limited amount of surface runoff would immediately effect the road surface.

Southern Portion (from ridgetop south) of Bear Gulch Unit 4:

This soil type (38F) has limitations of the management of timber based on slope, erosion hazard, wind throw hazard seedling mortality and plant competition. The steep rocky outcrop areas would be heavily impacted by the falling and yarding of timber. An underburn fire has recently removed most of the organic matter on the western half of this slope. Standing snags and down wood prevail heavily in this area. Additional fire (broadcast) for site preparation is not recommended for the rocky portions of this unit. Pile and burn or lop and scatter the material where concentrations preclude planting.

The TPCC designations for this area are primarily FGR2 with several rock outcrops as checkmarks. In order to harvest this rocky area, full suspension of the logs would be required. Logging in the summer will not mitigate the impacts. Just falling the timber on the shallow rock ground would reduce the productivity that we have at this time.

The rock outcrop portion of the unit will be hard to plant because of the shallow, rocky soils. The removal of timber will not adversely affect the productivity of the site if harvest is kept above and below the identified rock bands. The area outside the rock band will be dry early in the summer and will get extremely dry by late fall; however, this does not mean trees cannot be reestablished on the site after removal.

By reserving the rock areas in this portion of Bear Gulch Unit 4, piling and burning, and following the Project Design Features for roads, the harvested area should be maximized and the productivity of the site protected.

Impacts on Air Quality

No Action Alternative

No effects are anticipated from the No Action Alternative.

Proposed Action

Prescribed burning will be conducted in accordance with the Operational Guidance for the Oregon

Smoke Management Program (ODF 1992). Winter or late fall burning may result in the accumulation of smoke in nearby, low-lying areas due to temperature inversions. Spring burning will result in the best dispersal of the smoke due to onshore winds through the Coast Range Mountains and less accumulation of residual smoke into nearby low lying areas because of better dispersal of the initial smoke column.

Impacts on Environmental Justice

No Action Alternative

No direct, indirect, or cumulative impacts should occur. Current laws and regulations require protection and management of public lands to provide for a wide variety of forest types and ages that support forest use and products. No substantial or disproportionately high and adverse human health, and economic or environmental effects should occur to minority, Indian tribe, or low-income populations.

Proposed Action

Direct Impacts:

There are no known cultural or religious uses for these areas. Small sale permits for minor forest products cover all BLM lands and do not track site specific use areas. However, there are no products unique to any of these sites and past records or knowledge of area use indicate there is little use in these areas. But, any particular individual currently using these sites could be directly impacted and have to use other areas. This impact would only be on an individual and not a population/minority impact.

Indirect Impacts:

Since different minor forest products can be associated with different stand development stages those products more often associated with an older stand would decline and those associated with stand initiation would increase. Current laws and regulations protect public lands and provide for a wide variety of forest types and ages. This variety should continue to support all types of forest use and products.

Cumulative Impacts:

There should be no cumulative impacts to Environmental Justice.

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